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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

October 18, 1999

BY HAND

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
12th Street Lobby
TWA-325
Washington, D.C. 20554

**Re: Comments of Thomson Consumer Electronics, Inc.
 ET Docket No. 99-254**

Dear Ms. Salas:

Enclosed for filing please find the original and nine (9) copies of the Comments of Thomson Consumer Electronics, Inc. in the above-referenced docket.

Please stamp and return to this office with the courier the enclosed extra copy of this filing designated for that purpose. Please direct any questions that you may have to the undersigned.

Respectfully submitted,

Lawrence R. Sidman

Lawrence R. Sidman

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BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

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OCT 18 1999

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OFFICE OF THE SECRETARY

In the Matter of

Closed Captioning Requirements for
Digital Television Receivers

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ET Docket No. 99-254

COMMENTS OF
THOMSON CONSUMER ELECTRONICS, INC.

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October 18, 1999

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**COMMENTS OF
THOMSON CONSUMER ELECTRONICS, INC.**

EXECUTIVE SUMMARY

Thomson fully supports the Commission's continued efforts to fulfill its obligations under the Television Decoder Circuitry Act of 1990 ("TDCA") to ensure the widest possible availability of DTV programming to persons with disabilities. Indeed, the benefits of closed captioning extend beyond the disabled community to include millions of children, non-English speaking persons and others who use the technology to improve their reading and other language skills. Moreover, many consumers without special needs or circumstances find closed captioning a useful and convenient feature at work or at home. In short, while the needs of the disabled community remain paramount, closed captioning has become a commercially desirable feature. We are committed to continuing to offer our customers, particularly those with disabilities, the capabilities they need and desire to participate fully in the digital television revolution.

Thomson has played a proactive role in the development of closed captioning technologies. Together with CEMA, its principal trade association, Thomson has supported and

devoted substantial resources to efforts which facilitate the availability of television and other technologies to people with disabilities. For example, Thomson has voluntarily built in analog closed captioning capability into its new RCA DTC100 digital set-top converter box, which has just gone on sale to the public this month.

As the Commission extends its closed captioning rules to digital television, Thomson urges the Commission to adopt the recommended practices contained in Section 9 of EIA-708-B (as discussed *infra*, the more current version of EIA-708-A) and to provide manufacturers with the flexibility to make market-based decisions regarding the introduction of additional closed captioning enhancements.

There is a threshold question regarding the Commission's authority to extend its closed captioning rules beyond those devices expressly identified by Congress in the TDCA (i.e., those with screens measuring 13-inches in diameter or greater). At the same time, Thomson appreciates the Commission's interest in making available closed captioning to consumers choosing to receive DTV services using a set-top converter box ("STB") and/or a separately sold DTV tuner. Accordingly, with respect to set-top converter boxes and separately sold tuners, if the Commission concludes that it possesses the requisite authority, Thomson urges the Commission to adopt only limited mandates that ensure that these devices not impair a consumer's ability to view closed captioned text either on an analog or a digital television receiver. In most cases, this objective can be achieved by simply requiring STBs to pass through closed captioning data. The Commission should refrain, however, from imposing on manufacturers any requirement that digital set-top converters or separate DTV tuners convert any digital closed captioning data for analog display when they do not include, as EIA-708-B does, closed captioning data formatted to EIA-608. The Commission's rules should exempt any

device not primarily designed to receive and/or convert DTV signals for display on an analog receiver or a separate monitor (such as digital VCRs and personal video recorders). Such an exemption, however, would not include personal computers equipped to receive and display DTV signals.

While Thomson finds reasonable the Commission's proposal to require that dual-mode DTV receivers be capable of displaying closed captioning text in both its analog and digital modes, we urge the Commission not to require dual-mode receivers to respond to digital closed captioning data formatted to any standard other than EIA-708-B.

With respect to timing, while Thomson is committed to incorporating closed captioning capability in its new DTV receiver products as quickly as practicable, we urge the Commission to extend its proposed compliance deadline to 24 months after adoption of the Commission's rules. Such an extension is necessary to ensure the delivery to consumers of the highest quality products, is driven by the demands of the product cycle governing the introduction of new consumer electronics products, and is completely consistent with the Commission's implementation of the original provisions of the TDCA.

Finally, the existing standard by which the Commission applies its TDCA rules according to a receiver's screen measurement should be altered to reflect the new dimensions of DTV receivers. Thomson suggests the Commission adopt a standard based on a DTV receiver's vertical screen height, requiring specifically that devices with a vertical height of 7.8 inches or greater include closed captioning capability pursuant to EIA-708-B and the Commission's rules.

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**COMMENTS OF
THOMSON CONSUMER ELECTRONICS, INC.**

I. INTRODUCTION.

Thomson Consumer Electronics, Inc. ("Thomson") respectfully submits these comments in the above-captioned Notice of Proposed Rulemaking ("*NPRM*")^{1/} to amend Part 15 of the Commission's rules to adopt technical standards for the display of closed captions on digital television ("DTV") receivers, and to require the inclusion of closed captioning decoder circuitry in DTV receivers. The Commission proposes these rules to ensure access to digital television programming for people with disabilities in fulfillment of its obligations under the Telecommunications Decoder Circuitry Act of 1990 ("TDCA").^{2/}

^{1/} *In the Matter of Closed Captioning Requirements for Digital Television Receivers*, ET Docket No. 99-254, *Notice of Proposed Rulemaking*, FCC 99-180 (released July 15, 1999) ("*NPRM*").

^{2/} Pub. L. No. 101-431, 104 Stat. 960 (1990) (codified at 47 U.S.C. §§ 303(u), 330(b)).

II. THOMSON'S INTEREST IN THIS PROCEEDING.

Headquartered in Indianapolis, Indiana, Thomson is a major manufacturer and marketer of analog color TV receivers, related video hardware, and a full range of consumer electronics products. Best known for its RCA, GE and PROSCAN brands, Thomson is the market leader in U.S. sales of color television receivers and VCRs. Most recently, Thomson has introduced state-of-the-art digital high definition television receivers and digital set-top receivers and set-top converters into its product line.

Building on its manufacturing and marketing expertise in the color television business, Thomson also has established itself as an industry leader in digital television. As a member of both the Advanced Television Research Consortium and, later, the digital HDTV "Grand Alliance," Thomson has been heavily involved in the development of digital over-the-air broadcast television technology, and particularly in the design of the ATSC DTV transmission standard adopted by the Commission in 1996.

This fall, under the RCA and PROSCAN brand names, Thomson introduced the most advanced television products it has ever offered to retail locations in major markets where broadcasters are initiating digital broadcasting. Thomson's premier digital high definition television ("HDTV") receiver is a 61-inch rear projection receiver. Alternatively, for those consumers who do not wish to purchase a digital HDTV receiver now, or who wish to receive DTV programming either on an NTSC receiver or a separate monitor, Thomson offers the DTC100 digital set-top box. Like its digital HDTV receivers, Thomson's digital set-top converter box combines abundant features, including the ability to decode VSB DTV signals, standard NTSC reception and direct broadcast satellite programming (including HDTV). At prices beginning under \$650 (the suggested retail price of the DTC100), Thomson's line of

HDTV products will enable consumers to make the early leap to digital television in a manner that offers consumers maximum DTV functionality at a very competitive price.

Through its participation in industry standard-setting efforts and the instant proceeding, Thomson is committed to ensuring that persons with disabilities have access to and are able to enjoy the extraordinary benefits that digital television has to offer.

III. MANUFACTURERS WILL REQUIRE 24 MONTHS FOLLOWING THE COMMISSION'S ADOPTION OF FINAL RULES IN THIS PROCEEDING TO INCORPORATE CLOSED CAPTIONING CAPABILITY IN THEIR DTV RECEIVERS.

The Commission is to be commended for taking an aggressive approach to DTV closed captioning implementation. Indeed, a successful and ubiquitous transition to digital television must ensure that *all* Americans, including those with disabilities, have access to broadcasters' DTV programming and services as quickly as practicable. Indivisible from the goal of speed, however, is the need to ensure that the DTV equipment purchased by the consumers meets the same high standards for quality and performance that they have come to expect over the years and which they deserve.

Thomson is committed firmly to achieving both goals. Thomson believes, however, that the Commission's proposed 1-year deadline for manufacturers to begin production of closed-captioning-equipped DTVs is simply too stringent and will create unacceptable product development and implementation risk in light of the 18- to 24-month production cycle that historically governs the introduction of new consumer electronics technologies.

The extensive development cycle for DTV closed captioning, from the beginning of its initial design phase to the product's delivery to consumer markets, is approximately 18 to 24 months. This process includes several rounds of production and testing, both of individual

elements and integrated components and, as such, is critical to ensuring that the products consumers purchase are of optimum quality and easy to use. This development process includes:

- integrated circuit design and development;
- user interface design and development;
- hardware and software system design and development;
- lab builds (*i.e.*, construction of at least two generations of laboratory prototypes);
- laboratory testing of each generation of "lab builds;" factory builds (*i.e.*, retooling and construction of at least two generations of fully designed receivers);
- field testing of the "end-to-end" closed captioning system (which requires the availability of broadcast-delivered DTV closed captioning);
- release of final software; and
- final production.

Some of these steps, particularly those related to testing and production, are dependent, in part, on externalities beyond any control of the manufacturer. For example, in order to determine that DTV receivers equipped with closed captioning capability are fully functional in the "real world," DTV broadcasters will first have to be transmitting closed captioning data with their programming. Field tests utilizing such transmitted data are indispensable to development of an acceptable product, lest consumers be offered DTVs with closed captioning technology that is less than fully functional.^{3/}

^{3/} In fact, such an instance occurred in the past in connection with closed captioning because of the lack of line 21 field 2 data at the time of implementation. Thomson notes also that a mandate for DTV receivers to include closed captioning circuitry is meaningless for consumers (and problematic for purposes of pre-production field testing) if closed captioning data is not being transmitted by DTV broadcasters. One need look no further than the V-chip to recognize the importance to the success of these types of services of ensuring that both consumer

Strict adherence to this production cycle is essential for the successful introduction of new features in digital television receivers and to ensuring that these advances are both quality-tested and user-friendly before they are made available to the general public. The Commission has an obligation, as does Thomson and every other DTV manufacturer, to ensure that the first generation of DTV receivers equipped with closed captioning technology meets consumers' high expectations for quality and performance to the greatest extent possible. A delay of a few months in the retail availability of DTV closed captioning will be far easier for disabled consumers to accept than would be their swifter purchase of a digital receiver in which closed captioning does not work as intended, or is difficult or cumbersome to operate.

Moreover, in addition to the normal product cycle considerations, the Commission's deadline also should take into account the enormous concurrent technical challenges now facing DTV manufacturers, such as those concerning cable-DTV compatibility. At such a crucial time in the transition, it is important that integration of closed captioning be accomplished as rapidly as possible but not compromise other important DTV product improvements. The costs associated with a diversion of resources necessitated by an unduly aggressive timetable for meeting the Commission's proposed deadline would be considerable, and may serve to slow the downward price movement that has already been achieved in DTV equipment.

In light of these considerations, Thomson urges the Commission to extend its proposed deadline to require manufacturers to begin production of closed captioning-equipped DTVs within 24 months of the Commission's adoption of final rules in this proceeding. Though

electronics manufacturers and broadcasters make DTV closed captioning services available as quickly and ubiquitously as possible. Thomson would urge the Commission to do everything in its power to encourage DTV broadcasters to transmit closed captioning data in a manner that conforms to manufacturers' timetable to include this capability in its DTV receivers.

modest, such a deadline extension would ensure the greatest success of DTV closed captioning services.

We note that a 24-month deadline would be consistent with, albeit slightly more stringent than, the original implementation schedule mandated by Congress in the 1990 Decoder Act. As the Commission will recall, in that instance, Congress provided manufacturers with a statutory deadline of 3 years to comply with its requirements. The Commission, to its credit, adopted final rules implementing the Decoder Act within 6 months, thus giving manufacturers more than 2 years to implement analog closed captioning capability. Thomson recommends the Commission follow the same path with regard to extending closed captioning in digital receivers, an endeavor which, for reasons discussed above, is arguably *more* challenging than that original enterprise.

IV. THE COMMISSION SHOULD MANDATE ONLY THE RECOMMENDATIONS CONTAINED IN SECTION 9 OF EIA-708-B, AND ALLOW MANUFACTURERS TO IMPLEMENT ADDITIONAL CLOSED CAPTIONING FEATURES AT THEIR DISCRETION.

The Commission proposes to require DTV receivers to function pursuant to the recommendations contained in Section 9 of EIA-708-A, which contains minimum performance recommendations for the operation of DTV closed captioning decoders.^{4/} Thomson supports this proposal.

As the Commission notes in the *NPRM*, the recommendations contained in Section 9 provide a set of common basic functions for DTV closed caption decoders, and, as such, provide DTV manufacturers with sufficient guidance for the successful implementation of closed

^{4/} *NPRM* at ¶¶ 5-7.

captioning in digital television receivers.^{5/} Accordingly, Thomson supports the Commission's proposal to require DTV receivers to function pursuant to the recommendations contained in Section 9.^{6/}

Given the sufficiency of the recommendations contained in Section 9, and the significant marketplace incentives which will continue to drive manufacturers to include additional and enhanced closed captioning capabilities in their television receiver products (both analog and digital), Thomson strongly urges the Commission to mandate only those requirements contained in Section 9, and allow manufacturers to implement additional closed captioning features contained in EIA-708-B at their own discretion. A mandate that DTV receivers adhere to the entire EIA standard would stifle market-driven innovations critical to competitive differentiation among products. Manufacturers must have flexibility to design these innovations, not only to introduce features that consumers prefer, but to eliminate those they dislike. This is only possible with a flexible regulatory approach.

A Commission mandate beyond the core requirements contained in Section 9 also would impose substantial additional costs on manufacturers, which necessarily would be reflected in increased retail prices for nearly all DTVs. Thomson is focused on offering consumers DTV products that are increasingly affordable; a light regulatory approach to closed captioning would be beneficial to these efforts, to our consumers, and to the DTV transition.

It is also important to note that, because many DTV receivers, short of a complete

^{5/} Id.

^{6/} However, in light of continued work and necessary technical modifications that have been made to EIA-708-A standard since its initial adoption, Thomson recommends the Commission adopt the more current version of Section 9, which now appears in EIA-708-B. A copy of EIA-708-B has been filed as an attachment to CEMA's comments in this proceeding.

redesign of their chipsets, are incapable of supporting the full standard, required compliance with the entire standard could delay the availability of closed-caption-capable DTVs. American consumers and the timely and smooth transition to DTV transition can afford neither. We urge the Commission to adopt only the requirements contained in Section 9 of EIA-708-B, and allow the marketplace to drive further innovations in digital closed captioning services.

V. IF THE COMMISSION CONCLUDES IT HAS THE REQUISITE STATUTORY AUTHORITY, THE COMMISSION SHOULD ADOPT ONLY LIMITED REQUIREMENTS FOR NON-DISPLAY DEVICES.

Noting that “DTV reception capability will be marketed in a number of ways,” including through the use of set-top converter boxes (for reception on analog receivers) and separated DTV tuners and display units, the Commission proposes to require that all such devices provide for the display of closed captioning pursuant to the provisions of the Television Decoder Circuitry Act of 1990.^{7/} The Commission tentatively concludes that Section 330(b) of the Communications Act gives it the authority to adopt such a requirement.”^{8/}

While Thomson supports the Commission’s goal of ensuring broad availability of closed captioning services, we believe, as a threshold matter, that the Commission’s tentative conclusion, that it has authority to apply the provisions of the TDCA to any device not expressly identified by Congress therein, is questionable.^{9/} Notwithstanding that belief, Thomson appreciates the challenge to ubiquitous availability of closed captioning presented by the

^{7/} *NPRM* at ¶ 12.

^{8/} *Id.*

^{9/} Thomson associates itself with the comments filed in this proceeding by CEMA, which discuss in greater detail the Commission’s authority to regulate closed captioning in non-display DTV devices.

availability of set-top converter boxes and separated DTV tuners, and, as a practical matter, would be willing to support some limited requirements as applied to certain DTV reception devices.^{10/}

The Commission should exercise great restraint in applying the TDCA to any non-display apparatus. As already discussed, manufacturers face substantial market pressure to offer closed captioning capability to their customers, a demand that is not expected to diminish in any way with regard to digital television. To the contrary, consumers will demand that devices such as digital-to-analog converter boxes and separate tuners do not impair their ability to view closed captioning text either on an NTSC or a DTV receiver. Manufacturers choosing to inhibit access to these services, either in the analog or digital context, would face the wrath of many consumers who have come to depend on closed captioning.

Thomson believes these market forces mitigate against the Commission need to regulate heavily in the area of non-display devices. As with DTV closed captioning generally, the market and the technology for these products is still developing. The Commission must be very careful, at such an early stage of its evolution, not to risk freezing work on new innovations and solutions in a rigid regulatory format.

^{10/} As discussed *infra*, Thomson would not support such requirements on any device not expressly designed to enable the consumer to receive and/or convert DTV signals for display on a DTV receiver with a 13-inch diagonal (or, more appropriately, 7.8" vertical) display, such as digital VCRs and personal video recorders.

With these concerns in mind, but recognizing the Commission's legitimate interest in ensuring the widest availability of closed captioning possible, Thomson respectfully suggests the Commission consider adopting rules to require that digital-to-analog set-top converters:

- (1) Pass through, without degradation, the analog closed captioning data carried in NTSC television signals, for processing by an analog receiver's closed captioning circuitry;
- (2) Pass through, without degradation, the digital closed captioning data carried in an ATSC DTV signal, for processing by a DTV receiver's closed captioning circuitry;
- (3) Decode and output the analog closed captioning data carried in the digital signal (formatted pursuant to EIA-608) for processing by the analog receiver's closed captioning circuitry; and
- (4) Decode, in the case of its use with an HDTV display-only device, closed captioning data received in both analog and digital format.

With regard to separate DTV tuners sold or designed expressly to operate with monitors with a display screen of 7.8 inches in height or larger, the Commission should consider adopting rules requiring closed captioning capability.

Although Thomson is prepared to support the approach described above, it would strongly object to any requirement that would mandate a digital set-top converter box convert digital closed captioning data for display in analog form where data formatted to EIA-608 is not already present. Such a requirement would require top-to-bottom redesign of DTV software and chipsets, would be extremely difficult to implement technically, and then, is potentially very costly. Thomson is committed to innovating in closed captioning technology. Such a requirement would stifle such innovation and deny consumers the ability to choose among an array of competitively featured DTVs with closed captioning capability.

Additionally, the Commission should not require manufacturers to include closed captioning capability in other non-display equipment capable of, *but not designed principally to*, receive DTV transmissions, such as video cassette recorders (“VCRs”) and personal video recorders (“PVRs”). These devices, in addition to being far outside the statutory boundaries set by Congress under the TDCA, function only secondarily as DTV receivers and, unlike separate DTV tuners and DTV converter boxes, will not be the means by which most consumers receive DTV services when not purchasing a display-equipped DTV receiver.

Finally, with respect to computers sold with DTV tuners, Thomson believes the Commission should adopt the same approach as it did in its technical rules governing V-chip program blocking capability. Specifically, the Commission’s rules should require computers sold with DTV tuners to include both analog and digital captioning capabilities, “. . . where a computer is sold either as a single unit (i.e., with tuner and monitor in the same enclosure), or a separate tuner and monitor sold together as part of the same transaction.”^{11/}

Thomson believes the approach outlined satisfies the twin objectives of ensuring that consumers continue to enjoy ubiquitous availability of closed captioning services, as well as a variety of competitively priced options through which to make the DTV transition.

^{11/} See 47 C.F.R. §§ 15.120(a), (b); *See also Report and Order* in ET Docket No. 97-206, 13 FCC Rcd 11248 (“*Report and Order*”) at ¶ 38.

VI. A “DUAL-MODE” CLOSED CAPTIONING REQUIREMENT IS REASONABLE, THOUGH DTVS SHOULD NOT BE REQUIRED TO RESPOND TO DIGITAL CLOSED CAPTIONING DATA FORMATTED TO ANY STANDARD OTHER THAN EIA-708-B.

Recognizing that, particularly during the transition, most DTV receivers will be designed to operate in both analog and digital modes, the Commission proposes to require these devices (so-called “dual mode” DTVs) to provide closed captioning functionality according to both modes of operation.^{12/} As a general matter, Thomson supports this proposal as a reasonable measure to ensure that disabled persons and other consumers utilizing closed captioning services have seamless access to these services throughout the transition. Specifically, Thomson supports a requirement that a dual mode DTV:

- (1) when operating in its analog mode, be capable of displaying closed captioned text pursuant to the Commission’s existing rules (and the EIA-608 standard); and
- (2) when operating in its digital mode, be capable of displaying closed captioned text pursuant to the EIA-708-A,^{13/} as proposed herein.

However, Thomson strongly urges the Commission to reconsider its tentative proposal to require that “the decoder circuitry in digital tuners respond primarily to any digitally formatted caption information.”^{14/} Such an open-ended requirement appears to be in direct conflict with the Commission’s proposal to incorporate only the provisions of Section 9 of the EIA standard into the Commission’s rules. Manufacturers must be given sufficient flexibility to add closed captioning enhancements at their discretion, using the practices defined in Section 9 as a *baseline*

^{12/} *NPRM* at ¶ 11.

^{13/} Or, more appropriately, EIA-708-B, as suggested earlier.

^{14/} *NPRM* at ¶ 11.

on which to build. The Commission's proposal in this instance goes well beyond such a baseline requirement, and would be very difficult to implement without imposing excessive costs on consumers, and, for the reasons outlined *supra*, delaying the availability of DTVs to consumers.

VII. THE COMMISSION'S RULES SHOULD APPLY TO DTV RECEIVERS ACCORDING TO THE RECEIVER'S VERTICAL SCREEN HEIGHT.

The Commission proposes to apply its DTV closed captioning rules to receivers with picture screens "13 inches or greater in size," and seeks comment on the appropriateness of applying this standard to DTV receivers.^{15/} In fact, the "13-inches or larger" diagonal measurement standard is not appropriate in the DTV context. Instead, Thomson believes the Commission should adopt a standard using the equivalent vertical height of a DTV receiver, as opposed to its screen's diagonal measurement or total area.

There are several reasons for this recommendation. First, were the "13 inches or greater" standard to be applied to DTV receivers, as it is currently to analog receivers, the shorter relative vertical size of the DTV receiver will cause the display of closed captioned text to take up significant vertical space on the screen, interfering with the picture, and resulting in an unacceptable viewing experience for the consumer.^{16/}

In addition, display of closed captioning carried on analog programming, which will constitute a large portion of programming during the transition, will be particularly unsuitable for

^{15/} *NPRM* at ¶¶ 9-10.

^{16/} In contrast to the standard analog receiver's relatively square picture shape (due to its aspect ratio of 4:3), most DTV receivers have a rectangular screen shape (due to its aspect ratio of 16:9). The different aspect ratio also results in markedly different total screen areas between analog and digital receivers. For example, an analog receiver marketed with a 13-inch screen would have a total screen area of 81.12 sq. in.; whereas a DTV with a "13-inch diagonal screen" would have a total screen area of only 72.18 sq. inches.

DTV receivers with a screen size of 13" diagonally, due to the fact that the analog closed captioning text, which will be formatted for display on a 4:3 screen, will not be capable of scaling out along the longer horizontal axis of DTV display units.

Accordingly, in order to compensate for the screen shape differential, while still complying with the objectives of the TDCA, Thomson recommends that closed captioning be required for DTV receivers that are 7.8 inches or greater in height. Such a requirement would ensure that closed captions are captured and displayed sufficiently on DTVs, and is functionally and visually comparable to the existing requirement applying to 13-inch, diagonally measured, analog receivers with a screen size ratio of 4:3.

VIII. CONCLUSION.

For the reasons stated above, Thomson urges the Commission to adopt rules for the provision of closed captioning on DTV receivers consistent with the views expressed herein.

Respectfully submitted,

THOMSON CONSUMER ELECTRONICS, INC.

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